

## ABSTRACT OF THE DISCLOSURE

A rat ganglioside GM<sub>1</sub>-specific  $\alpha 1 \rightarrow 2$ fucosyltransferase is disclosed.

5 Nucleotide sequences of a rat ganglioside GM<sub>1</sub>-specific  $\alpha 1 \rightarrow 2$ fucosyltransferase, amino acid sequences of its encoded protein (including peptide or polypeptide), and derivatives thereof are described. Also described are fragments (and derivatives and analogs thereof) which  
10 comprise a domain of rat ganglioside GM<sub>1</sub>-specific  $\alpha 1 \rightarrow 2$ fucosyltransferase with catalytic activity. Methods of production of rat ganglioside GM<sub>1</sub>-specific  $\alpha 1 \rightarrow 2$ fucosyltransferase and derivatives and analogs thereof (*e.g.* by recombinant means) are provided. Methods of  
15 inhibiting the function of rat ganglioside GM<sub>1</sub>-specific  $\alpha 1 \rightarrow 2$ fucosyltransferase (*e.g.* by means of antisense RNA) are provided. Methods of commercial scale use of the rat ganglioside GM<sub>1</sub>-specific  $\alpha 1 \rightarrow 2$ fucosyltransferase in the production of fucosyl-saccharide compositions are described. Applications of these compositions, *e.g.* as additives for human  
20 nutritive compositions or immunotherapeutics for cancer, are disclosed.